Sept. 29 to Oct. 1 the rows were cut and husked, and the stalks and ears weighed and counted, with the following results: —

	Aggregate Yield.		Comparative Yield.	
	Tassels left on.	Tassels removed.	Tassels left on.	Tassels removed.
Number of good ears	1551	2338	100	151
Number of poor ears	628	885	100	141
Number of abortive ears	2566	951	100	37
Total number of ears	4745	4174	100	88
Weight of merchantable corn (pounds)	710	1078	100	152
Weight of poor corn (pounds)	130	187	100	144
Number of stalks	4186	4228	100	101
100 stalks weighed (pounds)	82	79	100	96

It will thus be seen that the number of good ears and the weight of merchantable corn were both a little more than fifty per cent greater on the rows from which the tassels were removed than upon those upon which the tassels were left. This is not only true of the two sets of rows as a whole, but with the individual rows as well. In no case did a row upon which the tassels were left produce anywhere near as much as the tasselled rows on either side of it. In fact, the results given above are really the aggregate results of twenty-four distinct duplicate experiments, each of which alone showed the same thing as the aggregate of all.

By abortive ears is meant those sets that made only a bunch of husks, and sometimes a small cob, but no grain. It will be noticed that they were by far the most numerous on those rows from which the tassels were not removed. It will also be noticed that the total of the good, poor, and abortive ears is about fourteen per cent greater on the rows on which the tassels were left, while the weight of merchantable corn is more than fifty per cent greater on those rows from which the tassels were removed.

HEALTH MATTERS.

Action of an Infusion of Coffee on Bacteria.

IN studying the germicidal action of coffee, Dr. Luderitz made use of infusions of different degrees of concentration, varying from five to thirty grains of coffee to ten cubic centimetres of water. According to *The Sanitary News*, he mixed from four to six drops of pure culture-broth with eight to ten cubic centimetres of this infusion, and at the end of a certain time he withdrew parts of this mixture and cultivated them in gelatine. Experiment showed that the micrococcus prodigiosus dies in a ten-per-cent infusion of coffee in from three to five days, the bacillus of typhus in from one to three days, the proteus vulgaris in from two to four days, the staphylococcus aureus in from four to seven days, the streptococcus of erysipelas in one day, the bacillus of cholera in from three to four hours, the bacillus of anthrax in from two to three hours, and the spores of anthrax in from two to four weeks. In a thirty-per-cent infusion of coffee the typhus bacillus dies in one day, the staphylococcus aureus in from one to three days, the bacillus of cholera in from half an hour to two hours, the bacillus of anthrax in two hours, the spores of anthrax in from two to four weeks. In a second series of experiments Luderitz studied the influence of an infusion of coffee mixed with gelatine on the development of bacteria. These experiments showed that the micrococcus prodigiosus does not vegetate in gelatine containing from three to nine per cent of coffee, the bacillus of typhus in gelatine with three per cent of coffee, the proteus vulgaris with from five to nine per cent, the staphylococcus aureus with two per cent, the streptococcus of erysipelas with one per cent, the cholera bacillus with one, and the bacillus of anthrax with 0.6 per cent. The action is the same for the different qualities of coffee, and is due, not to the caffeine, but to the products of the roasting of the coffee.

NOTES AND NEWS.

A FEW more points may be added to what was said on the Etruscan question in *Science*, Feb. 20, p. 99. M. Zanardelli has published, in the last volume of the *Bulletin de la Société d'Anthropologie de Bruxelles* (1890), a paper on the relationship of the Etruscan, Umbrian, and Oscan languages to the modern Italian. So far as the first-named goes, the resemblances are merely phonetic, as in the frequency of syllables ending in vowels. Professor Ferdinando Borsari of Naples has contributed to the last number of the *Rassegna Scientifica* a new study of the famous inscription of Menep phtah (of the nineteenth dynasty), in which the Etruscans, and, as he thinks, the Sicilians and Sardinians, are for the first time mentioned (*Etruschi, Sardi e Siculi nel* XIV° *Secolo prima dell'Era volgare*). He does not meet all the objections offered to these identifications, nor does he note the recent suggestions as to the interpretation of the inscription by Dr. Max Müller and others.

— From the annual report of the special committee of the American Society of Civil Engineers, on uniform standard time, we learn that the advantages of the 24 hour notation are beginning to be recognized in various branches of civil life. In hospitals, for example, to prevent mistakes by nurses in the administration of medicine, in recording temperatures, and in other matters, the new system is being gradually introduced; also in weather-tables and in the recording of meteorological readings: indeed, in departments where simplicity of system and accuracy are essential, the new notation is being spontaneously brought into use in many quarters. For two or three years back the Canadian Almanac has abandoned the old notation and substituted the new. It is in connection with railway service, however, that the general introduction of the 24-hour notation may mainly be looked for.

— The notion that the Welsh had in pre-Columbian times some knowledge of the American continent has for centuries found advocates, but never a competent critic. The latest is B F. de Costa, who reprints from the *New England Historical and Genealogical Register* of January, 1891, his article on "The Pre-Columbian Voyages of the Welsh to America." He complains that the accounts of the alleged voyages of the Welsh to America about 1170 have not received the attention they merit; but Mr. De Costa aids little to this end. The passages he quotes are at second-hand and translations, and are eminently vague. They tell us at most that some sea-rover Madoc (there were many Madocs) found land in the West, and settled there. But both the date of this occurrence, and any definite information as to the land, are wanting. Why not print the originals, with a discussion of their sources? We are the more inclined to require this from a writer who dares the misleading statement that "the ancient literature of the Welsh carries us back to a period before the Christian era."

— In the "Report of the Lightning-Rod Conference" (London and New York, Spon, 1882), on p. 62, we read, "On the 13th June, 1854, the 'Jupiter' was struck by lightning. The conductors were in place; that of the mainmast which was struck went 2 metres (6 feet 6 inches) into the sea, and had at its end a ball 2 kilos in weight. After being struck the conductor had disappeared and the pieces of it were scattered everywhere." Further on, the report states that "the 'Jupiter' received no damage." There are a large number of cases on record in which the conductor is reported as destroyed or even dissipated, and yet no damage (always with the proviso noted below) occurred to the buildings or ships to which the conductors were attached. Generally it is stated that this fortunate result was in spite of the de-

struction of the rod. Would it not be more logical, in consideration of what we know of the conservation of energy, to say that the saving of damage to the building was on account of the destruction of the rod? The editor of *Science* will be glad to receive and publish pertinent accounts of lightning-stroke, that this controversy may be cleared up. But it should be borne in mind that a dissipated rod can protect only such points as lie between horizontal planes passing through its upper and lower ends, since the electrical energy comes in horizontally from the dielectric around.

— During the months of July and August, 1891, the following-named courses of instruction will be given in the summer schools of Harvard University: Anglo-Saxon, English, German, French, chemistry (4 courses), botany, geology (3 courses), physics (2 courses), physiology and hygiene, field-engineering (2 courses), physical training, and also a course of about thirty lectures concerning the methods of instruction in the several departments in which these courses belong. All of the above-named courses, except the two advanced courses in geology and those in field-engineering, are given in the college buildings at Cambridge, and are open to both men and women. The course in physiology and hygiene is expressly designed to meet the needs of teachers in the public schools. For information concerning the summer instruction in medicine, application should be made to the dean of the Harvard Medical School, Boylston Street, Boston, Mass. For circulars describing each of the summer courses in detail, application should be made to the secretary of Harvard University, Cambridge, Mass.

— As various erroneous statements have been made with regard to Dr. Nansen's Arctic expedition, the London *Times* gives the following account of what has actually been arranged. Dr. Nansen's desire is to leave Norway in February, 1892, but it is doubtful whether the special vessel which is being built will be ready by that time. Outside of Norway, not a farthing has been contributed by any one. The expedition is purely Norwegian, and will remain so. The Norwegian Government contributed 200,000 kroner; King Oscar, 20,000; twelve private individuals (all Norwegians except one Englishman, who has lived in Christiania for many years), 90,000: in all, 310,000 kroner, equal to £17,200. That, Dr. Nansen believes, will be sufficient. The ship, of course, is being specially constructed for the peculiar conditions which exist between the New Siberian Islands and the Pole. Dr. Nansen will be accompanied by probably not more than eight young men, all as stalwart and strong in physique as himself, and all equally confident of success.

— It has been shown by Dr. Marcet, according to *Nature* of March 12, that different persons respire different volumes of air to furnish to the body the oxygen required, and to yield a given weight of carbonic acid. Thus, to produce one gram of carbonic acid, three persons were found to need, on an average, 9 29, 10.51, and 11.30 litres of air respectively. The first was 23 years of age, the third 60; and no doubt the less the air required for a given combustion, the better the conditions of respiration. The influence of food on formation of carbonic acid in the body begins in the first hour after a meal, and increases for two or three hours, the period of maximum respiration of CO_2 varying in this time. After a certain time, the weight of CO_2 expired decreases more rapidly than the required volumes of air decrease. The influence of local variations of air-pressure appears in less air being needed, for a given amount of CO_2, with low pressures than with high; but the degree of the influence varies in individuals.

— It may be well to call attention again to the Royal Society of New South Wales prizes for original researches. The prizes are for the best communication (provided it be of sufficient merit) containing the results of original research or observation upon each of the following subjects: to be sent in not later than May 1, 1892, on the iron-ore deposits of New South Wales, the society's medal and £25; on the effect which settlement in Australia has produced upon indigenous vegetation, especially the depasturing of sheep and cattle, the society's medal and £25; on the coals and coal-measures of Australasia, the society's medal and £25: to be sent in not later than May 1, 1893, upon the weapons, utensils, and manufactures of the aborigines of Australia and Tasmania, the society's medal and £25; on the effect of the Australian climate upon the physical development of the Australian-born population, the society's medal and £25; on the injuries occasioned by insect pests upon introduced trees, the society's medal and £25. The competition is in no way confined to members of the society, nor to residents in Australia, but is open to all without any restriction whatever, excepting that a prize will not be awarded to a member of the council for the time being; neither will an award be made for a mere compilation, however meritorious in its way. The communication, to be successful, must be either wholly or in part the result of original observation or research on the part of the contributor. The society is fully sensible that the money value of the prize will not repay an investigator for the expenditure of his time and labor, but it is hoped that the honor will be regarded as a sufficient inducement and reward. All communications should be addressed to the honorary secretaries, 5 Elizabeth Street, Sydney, New South Wales.

— Some interesting remarks on squirrels are made by various writers in the *Zoölogist*. It is often said that squirrels are torpid during winter, but there is no really sound evidence for this view. Mr. Masefield, writing from Cheadle, Stafford, Eng , says (*Nature*, March 12), "I have seen squirrels abroad on fine days in, I think I may say, every one of the winter months ; and while pheasant-shooting near here on a sunny day (Jan. 6 last), which was about the middle of the most severe frost we have had for many years, with several inches of snow on the ground, I saw a squirrel jumping from tree to tree, before the beaters, in the most lively condition." Mr. Blagg, also writing from Cheadle, has "frequently seen squirrels abroad in the middle of the winter, when there has been deep snow on the ground and a keen frost in the air. I remember," he adds, "once seeing a squirrel abroad during a severe storm of sleet and rain in winter-time, and he appeared to be not at all inconvenienced by the rough weather." Mr. Blagg's idea is that the squirrel probably does sleep a good deal more in winter-time than in summer, as do many other wild animals, but that he has to be continually waking up and taking nourishment. The period of reproduction is unfavorable to the notion of an almost complete state of torpidity. The editor of the *Zoölogist* records that he has notes of "finding newly-born squirrels on March 21 (three young), April 9 (three young), April 26 (four young), and April 29 (two young). Those found at the end of March and beginning of April were naked and blind; those taken at the end of April were about three parts grown." According to the editor, "the old squirrels, in case of danger, remove the young from the nest, or 'drey,' to some hole in a tree, whither they carry them one by one in the mouth, just as a cat carries her kitten. One of the prettiest sights in the world is to see an old squirrel teaching a young one to jump."

— Professor Dubois of Berne, as we learn from *Nature* of March 12, has lately been studying the physiological action of electric currents and discharges; and he has some interesting observations on the human eye, which, it is known, has luminous sensations under the action of galvanic currents. Sudden variations of intensity, especially at making and breaking the circuit, produce such flashes. With a moistened plate at the nape of the neck, and a pad on the eye, a slight flash was distinctly perceived, even with a Leclanché cell of about 1.20 volts, and measuring in the galvanometer .04 of a milliampère. Raising the intensity to .5, the observer could tell which pole was applied to the eye. On the other hand, the retina responds much less readily to discharges from condensers or induction coils. Not till a capacity of 0.037 of a microfarad and a tension of 21 volts was reached was a true retinal flash perceived; and not even with 10 microfarads were the durable sensations characteristic of the two poles produced. The retina re-acts to quantity.

— A new quarterly journal is announced for publication by Macmillan & Co., *The Economic Journal*, issued under the auspices of the British Economic Association, a society which numbers among its members Professors R. M. Smith of Columbia, Taussig of Harvard, Alfred Marshall, Henry Sidgwick, and many others equally well known.